

What is Claimed is:

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1. A method of processing spread spectrum signals from a plurality of traffic channels and a plurality of pilot channels, comprising the steps of:
receiving data samples from the plurality of traffic channels and the plurality
5 of pilot channels;
correlating the received data samples to spreading codes to produce pilot
despread values and traffic despread values;
forming scale factors corresponding to the relative strengths of the plurality of
traffic channels and the plurality of pilot channels;
10 estimating channel responses using the pilot despread values to produce
channel coefficient estimates;
combining the traffic despread values to obtain detection statistics that
correspond to information symbols, using the channel coefficient estimates; and
scaling at least one of the traffic despread values, the channel estimates and
15 the pilot despread values by the scale factors so as to obtain detection statistics that
correspond to the relative strengths of the plurality of traffic channels and the plurality
of pilot channels.
2. A method according to Claim 1 wherein the scaling step comprises the
step of scaling the traffic despread values by the scale factors so as to obtain scaled
traffic despread values that are a function of the relative strengths of the plurality of
traffic channels and the plurality of pilot channels.
3. A method according to Claim 1 wherein the scaling step comprises the
step of scaling the channel coefficient estimates by the scale factors so as to obtain
scaled channel coefficient estimates that are a function of the relative strengths of the
plurality of traffic channels and the plurality of pilot channels.
4. A method according to Claim 1 wherein the scaling step comprises the
step of scaling the pilot despread values by the scale factors so as to obtain scaled
pilot despread values that are a function of the relative strengths of the plurality of
traffic channels and the plurality of pilot channels.

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5. A method according to Claim 1 wherein the step of forming scale factors comprises the steps of:

estimating power on a pilot channel;
estimating power on a traffic channel; and

5 determining scale factors based upon the estimated powers on the pilot channel and the traffic channel.

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6. A method according to Claim 1 wherein the step of forming scale factors comprises the steps of:

forming an error signal using the pilot channel despread values and the traffic channel despread values; and

5 computing a scale factor based on the error signal.

7. A method according to Claim 1 wherein the step of forming scale factors comprises the step of forming scale factors corresponding to the relative strengths of the plurality of traffic channels and the plurality of pilot channels using pilot despread values and traffic despread values corresponding to a plurality of
5 delays of a transmitted signal.

8. A method according to Claim 1 wherein the step of receiving comprises the step of receiving data samples from the plurality of traffic channels and the plurality of pilot channels during soft handoff from a first one of the traffic channels to a second one of the traffic channels.

9. A method according to Claim 5 wherein the step of estimating power on a traffic channel comprises the step of estimating an equivalent full rate power on the traffic channel.

10. A method of processing spread spectrum signals from a plurality of traffic channels and a plurality of pilot channels, comprising the steps of:

receiving data samples from the plurality of traffic channels and the plurality of pilot channels; and

5 obtaining from the received data samples detection statistics that correspond to information symbols while accounting for the relative strengths of the plurality of traffic channels and the plurality of pilot channels.

11. A method according to Claim 10 wherein the step of obtaining comprises the step of performing Rake combining while accounting for the relative strengths of the plurality of traffic channels and the plurality of pilot channels.

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12. A system for processing spread spectrum signals from a plurality of traffic channels and a plurality of pilot channels, the system comprising:

means for receiving data samples from the plurality of traffic channels and the plurality of pilot channels;

5 means for correlating the received data samples to spreading codes to produce pilot despread values and traffic despread values;

means for forming scale factors corresponding to the relative strengths of the plurality of traffic channels and the plurality of pilot channels;

10 means for estimating channel responses using the pilot despread values to produce channel coefficient estimates;

means for combining the traffic despread values to obtain detection statistics that correspond to information symbols, using the channel coefficient estimates; and

15 means for scaling at least one of the traffic despread values, the channel estimates and the pilot despread values by the scale factors such that the means for combining obtains detection statistics that correspond to the relative strengths of the plurality of traffic channels and the plurality of pilot channels.

13. A system according to Claim 12 wherein the scaling means comprises means for scaling the traffic despread values by the scale factors such that the means for combining obtains scaled traffic despread values that are a function of the relative strengths of the plurality of traffic channels and the plurality of pilot channels.

14. A system according to Claim 12 wherein the scaling means comprises means for scaling the channel coefficient estimates by the scale factors such that the means for combining obtains scaled channel coefficient estimates that are a function

of the relative strengths of the plurality of traffic channels and the plurality of pilot
5 channels.

15. A system according to Claim 12 wherein the scaling means comprises means for scaling the pilot despread values by the scale factors such that the means for combining obtains scaled pilot despread values that are a function of the relative strengths of the plurality of traffic channels and the plurality of pilot channels.

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16. A system according to Claim 12 wherein the means for forming scale factors comprises:

means for estimating power on a pilot channel;

means for estimating power on a traffic channel; and

5 means for determining scale factors based upon the estimated powers on the pilot channel and the traffic channel.

17. A system according to Claim 12 wherein the means for forming scale factors comprises:

means for forming an error signal using the pilot channel despread values and the traffic channel despread values; and

5 means for computing a scale factor based on the error signal.

18. A system according to Claim 12 wherein the means for forming scale factors comprises means for forming scale factors corresponding to the relative strengths of the plurality of traffic channels and the plurality of pilot channels using pilot despread values and traffic despread values corresponding to a plurality of
5 delays of a transmitted signal.

19. A system according to Claim 12 wherein the means for receiving comprises soft handoff receiving means.

20. A system according to Claim 16 wherein the means for estimating power on a traffic channel comprises means for estimating an equivalent full rate power on the traffic channel.

21. A system for processing spread spectrum signals from a plurality of traffic channels and a plurality of pilot channels, the system comprising:

means for receiving data samples from the plurality of traffic channels and the plurality of pilot channels; and

5 means for obtaining from the received data samples detection statistics that correspond to information symbols while accounting for the relative strengths of the plurality of traffic channels and the plurality of pilot channels.

22. A system according to Claim 21 wherein the means for obtaining comprises means for performing Rake combining while accounting for the relative strengths of the plurality of traffic channels and the plurality of pilot channels.

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23. A system for processing spread spectrum signals from a plurality of traffic channels and a plurality of pilot channels, the system comprising:

a receiver that receives data samples from the plurality of traffic channels and the plurality of pilot channels;

5 a correlator that correlates the received data samples to spreading codes to produce pilot despread values and traffic despread values;

a scale factor estimator that estimates scale factors corresponding to the relative strengths of the plurality of traffic channels and the plurality of pilot channels;

10 a channel coefficient estimator that estimates channel responses using the pilot despread values to produce channel coefficient estimates;

a combiner that combines the traffic despread values to obtain detection statistics that correspond to information symbols, using the channel coefficient estimates; and

15 a scaler that scales at least one of the traffic despread values, the channel estimates and the pilot despread values by the scale factors such that the combiner obtains detection statistics that correspond to the relative strengths of the plurality of traffic channels and the plurality of pilot channels.

24. A system according to Claim 23 wherein the scaler scales the traffic despread values by the scale factors such that the combiner obtains scaled traffic despread values that are a function of the relative strengths of the plurality of traffic channels and the plurality of pilot channels.

25. A system according to Claim 23 wherein the scaler scales the channel coefficient estimates by the scale factors such that the combiner obtains scaled channel coefficient estimates that are a function of the relative strengths of the plurality of traffic channels and the plurality of pilot channels.

26. A system according to Claim 23 wherein the scaler scales the pilot despread values by the scale factors such that the combiner obtains scaled pilot despread values that are a function of the relative strengths of the plurality of traffic channels and the plurality of pilot channels.

27. A system according to Claim 23 wherein the scale factor estimator comprises:

- a pilot channel power estimator; and
- a traffic channel power estimator.

Sub A17 28. A system according to Claim 23 wherein the scale factor estimator comprises:
an error signal generator that is responsive to the pilot channel despread values and the traffic channel despread values.

29. A system according to Claim 23 wherein the scale factor estimator forms scale factors corresponding to the relative strengths of the plurality of traffic channels and the plurality of pilot channels using pilot despread values and traffic despread values corresponding to a plurality of delays of a transmitted signal.

30. A system according to Claim 23 wherein the receiver comprises a soft handoff receiver.

31. A system according to Claim 27 wherein the traffic channel power estimator comprises an equivalent full rate power traffic channel estimator.

32. A system for processing spread spectrum signals from a plurality of traffic channels and a plurality of pilot channels, the system comprising:

a receiver that receives data samples from the plurality of traffic channels and the plurality of pilot channels; and

- 5 a processor that obtains from the received data samples detection statistics that correspond to information symbols while accounting for the relative strengths of the plurality of traffic channels and the plurality of pilot channels.

33. A system according to Claim 32 wherein the processor performs Rake combining while accounting for the relative strengths of the plurality of traffic channels and the plurality of pilot channels.

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